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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,591	06/24/2003	Yutaka Murakami	20402-00579-US1	1468
30678	7590	12/14/2006		
CONNOLLY BOVE LODGE & HUTZ LLP P.O. BOX 2207 WILMINGTON, DE 19899-2207			EXAMINER JOSEPH, JAISON	
			ART UNIT 2611	PAPER NUMBER

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/601,591

Applicant(s)

MURAKAMI ET AL.

Examiner

Jaison Joseph

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any - earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 35-57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 35-38, 41, 42, 45-48, 51, 52 and 55-57 is/are rejected.
- 7) ☒ Claim(s) 39, 40, 43, 44, 49, 50, 53 and 54 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 56 and 57 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 56, line 6 recite the limitation "...a pilot symbol to estimate an frequency offset of the information symbols...". However present specification does not disclose or suggest having a frequency offset estimating means. Therefore claim 56 contains subject matter, which was not described in the specification in such a way to enable one skilled in the art which pertains.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claims 36 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 36 recites the limitation "said amplitude if said pilot" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 46 recites the limitation "said amplitude if said pilot" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claims 38, 40, 48 and 50 are inherently rejected as being depended on above rejected claims.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 35 – 38, 41, 42, 45 – 48, 51, 52 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright (US Patent 5,809,083) in view of Kaku et al. (US Patent 5,550,811).

Regarding claim 35 and 45, Wright disclose a method of transmitting digital data stream so as to enable a bit error rate-reduced reception without influencing a peak power in a digital wireless communications system, the method including the steps of: converting said digital data stream into a first stream of information symbols through an

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8-or-more-signal-point modulation scheme (see figure 1 and figure 4, component 404 and 406); generating a pilot symbol (see figure 4 component 412); inserting said pilot symbol regularly in said first stream of said information symbols to generate a second symbol stream without influencing a peak power of a smoothed second symbol stream (see component 416); and transmitting a modulated version of said second symbol stream by wireless (see figure 4, component 426).

Wright is silent on the pilot symbol is disposed at a position farther from an origin of a signal constellation defined by said 8-or-more-signal-point modulation scheme than any of possible signal points on said signal constellation. However, in analogous art, Kaku et al teach the pilot symbols disposed at a position farther from an origin of signal constellation defined by 8 or more signal point modulation scheme than any of possible signal points on said signal constellation (see figure 3, and column 4, lines 34 – 35). Therefore it would be obvious to an ordinary skilled in the art at the time the invention was made to incorporate Kaku's pilot symbol in Wright's transmitter. The motivation or suggestion to do so is that the pilot signals can be easily distinguished from the information signals.

Regarding claim 36 and 46, which inherits the limitations of claim 35 and 45 respectively, Wright and Kaku does not disclose generating a pilot symbol includes the step of setting the amplitude of the pilot symbol not larger than 1.6times the maximum possible amplitude. However the pilot signals of Dolan and Kaku are greater than the maximum possible amplitude of the information signal and could have a limitation such as 1.6 times maximum possible amplitude of the information signal since applicant does

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not disclose setting the amplitude to 1.6 times the information signal provides an advantage, is used for a particular purpose, or solves a stated problem.

Regarding claim 37, 38, 47, and 48 Wright further teaches that the 8 or more signal point modulation scheme is an 8 or more signal point QAM modulation (see figure 1).

Regarding claim 41 and 51 Wright further teaches that the 8 or more signal point modulation scheme is an 8 or more signal point PSK modulation (see column 5, lines 5 – 33).

Regarding claim 42 and 52, which inherits the limitations of claim 41 and 51 respectively, the claimed method including the features corresponding to subject matter mentioned above in the rejection of claim 36 is applicable hereto.

Regarding claim 55, Wright further teach means for obtaining said second symbol stream from said modulated version of said second symbol stream (see figure 5, the receiver 500); means for using a pilot symbol to estimate an amplitude distortion of information symbols between said pilot signal and a next pilot symbol in said second symbol stream (see figure 5, components 518, 520, 530 and see column 9, lines 19 – column 11, line 30); means for removing said amplitude distortion from said information symbols following said pilot signal in said second symbol stream by using said estimated amplitude distortion to obtain amplitude-distortion-compensated information symbols (see figure 5 component 522 and see column 9, lines 19 – column 11, line 30); means for deciding a digital symbol associated with each of said obtained amplitude-

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distortion-compensated information symbols according to said signal constellation (see figure 5, component 524 and see column 9, lines 19 – column 11, line 30).

### ***Allowable Subject Matter***

Claims 39, 40, 43, 44, 49, 50, 53, and 54 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

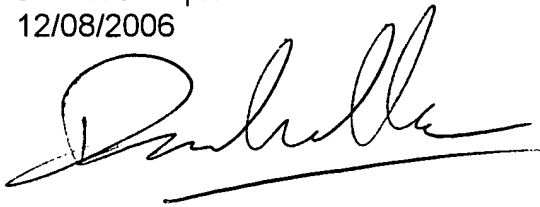
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaison Joseph whose telephone number is (571) 272-6041. The examiner can normally be reached on M-F 9:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jaison Joseph  
12/08/2006

A handwritten signature in black ink, appearing to read 'Jaison Joseph', with a horizontal line underneath.

**DACHA**  
**PRIMARY EXAMINED**